

Math 126 End of Week 4 Newsletter

UPCOMING SCHEDULE:

Friday: Section 13.4 and 14.1 (velocity/acceleration and intro to surfaces)
Monday: Section 14.1 and 14.3 (surfaces/partial derivatives)
Tuesday: Exam 1 Return and HW Q&A
Wednesday: Section 14.3 (Partial Derivatives)
Thursday: HW Q&A
Next Friday: Section 14.4/14.7 (Tangent Planes and Max/Min)

Exam 1 Reviewing, Reflection and Regrades Information:

Early next week, I will be emailing you exam information and statistics. I also will be emailing information about an exam reflection survey. So be looking for that email. .

HOMEWORK: Closing SUNDAY: 13.4 Closing Tues: 14.1 Closing Thurs: 14.3(part 1), 14.3(part 2)

NEW POSTINGS: There are several new postings which should help over the next week:

1. **Summary of 13.3, 13.4 and 14.1 (an example of a 14.1 problem is in here):**
<https://sites.math.washington.edu/~aloveles/Math126Spring2019/sp10m126week4review.pdf>
2. **Summary of 14.3 (Partial Derivatives):**
<https://sites.math.washington.edu/~aloveles/Math126Spring2019/sp10m126week6reviewA.pdf>
3. **Practice with Partial Derivatives and review of derivative rules (including implicit differentiation):**
<https://sites.math.washington.edu/~aloveles/Math126Spring2019/PartialDerivativesPractice.pdf>
4. **Full Examples of 14.4 (Tangent Planes) and 14.7 (Max/Min):**
<https://sites.math.washington.edu/~aloveles/Math126Spring2019/14-4and14-7Examples.pdf>

OLD EXAMS: As always, at the end of each week, I strongly encourage you to look in the exam archive to practice some exam problems pertaining to the current material. Here are a few chapter 14 questions, but it would be a good idea to still look at these 14.7 problems now.

For practice with 14.1, 14.3, 14.4 (partial derivatives and tangent planes)

Problem 2 and 3a from: <https://sites.math.washington.edu/~aloveles/Math126Spring2017/w16m126e2.pdf>
Problem 3 from: <http://www.math.washington.edu/~m126/midterms/midterm2/m126spr14novikExII.pdf>
Problem 2 from: <http://www.math.washington.edu/~m126/midterms/midterm2/m126win14bekyelExII.pdf>
Problem 2a from: <http://www.math.washington.edu/~m126/midterms/midterm2/m126spr13lovelessExII.pdf>
Problem 2 from: <http://www.math.washington.edu/~m126/midterms/midterm2/m126spr14perkinsExII.pdf>
Problem 2a from: <http://www.math.washington.edu/~m126/midterms/midterm2/m126aut12lovelessExII.pdf>
Problem 1b from: <http://www.math.washington.edu/~m126/midterms/midterm2/m126spr11lovelessExII.pdf>
Problem 2 from: <http://www.math.washington.edu/~m126/midterms/midterm2/m126spr10lovelessExII.pdf>

For practice with 14.7 (critical points and max/min):

Local Max/Min:

Problem 4 from: <http://www.math.washington.edu/~m126/midterms/midterm2/m126spr14novikExII.pdf>
Problem 3 from: <http://www.math.washington.edu/~m126/midterms/midterm2/m126spr14taggartExII.pdf>
Problem 2b from: <http://www.math.washington.edu/~m126/midterms/midterm2/m126spr13lovelessExII.pdf>
Problem 2 from: <http://www.math.washington.edu/~m126/midterms/midterm2/m126spr11lovelessExII.pdf>

Global Max/Min:

Problem 4 from: <http://www.math.washington.edu/~m126/midterms/midterm2/m126spr14lovelessExII.pdf>
Problem 5 from: <http://www.math.washington.edu/~m126/midterms/midterm2/m126spr14perkinsExII.pdf>
Problem 4a from: <http://www.math.washington.edu/~m126/midterms/midterm2/m126spr11lovelessExII.pdf>

Applied Max/Min:

Problem 4 from: <http://www.math.washington.edu/~m126/midterms/midterm2/m126win14bekyelExII.pdf>
Problem 4 from: <http://www.math.washington.edu/~m126/midterms/midterm2/m126aut12lovelessExII.pdf>
Problem 5 from: <http://www.math.washington.edu/~m126/midterms/midterm2/m126spr10lovelessExII.pdf>

COURSE MATERIAL NOTE (remembering Math 124):

Read this carefully and check out the links if you want to be ready for Chapter 14!

We have finished our discussion on 3D curves. Now we will discuss surfaces. The Chapter 14 discussion of surfaces is a lot like things you did in Math 124 for one variable functions. Here are skills I expect you to remember from Math 124.

Given a one variable function can you answer these questions

- a) What is a critical value?
- b) What is a local max/min?
- c) What is a global max/min?
- d) What are the first and second derivative tests?
- e) How do you do applied optimization problems?

It will be easier to understand Chapter 14 if you remember these facts. The one variable facts above are all from Chapter 4 of our textbook which you could reread if you don't know the answers to the questions above. You can also read these review sheets from my **materials from my Math 124 course**:

- *My basic review of these facts from chapter 4 of Math 124:*

<http://www.math.washington.edu/~aloveles/Math124Winter2013/m124week7reviewNOMeanValue.pdf>

and read my calculus 1 lecture notes on this topic:

<https://sites.math.washington.edu/~aloveles/Math124Fall2017/4-3%20Notes%20-%20f17.pdf>

- Here is another sheet of example problems of max/min questions (from my business calculus class):

<https://sites.math.washington.edu/~aloveles/Math112Winter2018/m112review10-1-10-3.pdf>

(The link above contains 3 full examples with pictures).

- *Overhead examples of applied optimization problems that we ask our students to do in Math 124:*

<http://www.math.washington.edu/~aloveles/Math124Winter2013/4-7OptimizationOverheads.pdf>

and here are my lectures notes on applied max/min from Math 124:

<https://sites.math.washington.edu/~aloveles/Math124Fall2017/4-7%20Notes%20-%20f17.pdf>

- *If you want some general practice with critical points and max and min from calculus 1, check out these old finals:*

Problem 6 from: https://sites.math.washington.edu/~m112/Final/w18_final_loveless.pdf

Solutions: https://sites.math.washington.edu/~m112/Final/w18_final_loveless_sol.pdf

Problem 7/8 from: https://sites.math.washington.edu/~m124/source/Exams/Final/final_17sp/final.pdf

Answers: https://sites.math.washington.edu/~m124/source/Exams/Final/final_17sp/answers.pdf

I hope some of this helps.

Dr. Andy Loveless